# ACI News Letter

Vol. 24, No. 2 JOURNAL of the AMERICAN CONCRETE INSTITUTE October 1952

**Left:** Section of flood wall at Kansas City Showing exposed re-inforcement after removal of all damaged concrete prior to Prepakt repair.

**Below:** Flood wall during Prepakt repair operations. Note weakening crack caused by reverse pressure of flood waters.

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# ACI

News Letter Contents

October 1952

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# Record Attendance in Chicago

The intense and growing interest in prestressed concrete was forcefully demonstrated by an attendance of more than 900 at the session on this subject presented jointly by ACI and ASCE, September 11, in the Grand Ballroom of the Conrad Hilton Hotel in Chicago. This and the session on precast concrete the following day drew record-breaking crowds at the Centennial of Engineering Convocation of Engineers.

A. T. Goldbeck, President, ACI, welcomed the audience and congratulated ASCE on its 100 years of activity. In memory of Harvey Whipple, long-time Secretary-Treasurer of ACI, there was a short period of silence. Stewart Mitchell, Chairman, Executive Committee, Structural Division, ASCE, also welcomed those in attendance. A. E. Cummings, Chairman, Joint ACI-ASCE Committee 323, Prestressed Concrete, then presided at the technical session.

Myle J. Holley, Associate Professor of Structural Engineering, MIT, summarized progress in prestressed concrete in this country since the First U. S. Conference on Prestressed Concrete last summer and reported that although the first American prestressed bridge was built only two years ago, there are now several major projects under way and 34 plants now make prestressed concrete elements on a production basis.

Six papers gave details on current applications of prestressed concrete in North and South America. E. H. Praeger, Madigan-Hyland, Long Island City, N. Y., described "Prestressed Elements of New York Harbor Pier 57" in which precast boxes floated into position were used as a substructure. "The Design, Construction, and Testing of the Endicott Street Bridge in Danvers, Massachusetts," was reviewed by J. C. Rundlett, Bridge Engineer, Massachusetts Dept. of Public Works. He was confident that anyone trying a prestressed concrete bridge would be sold on this method of construction.

*Continued on p. 4*

**Part of the large crowd at the prestressed concrete session, Sept. 11, 1952**

Daring bridges in Venezuela were the theme of the paper by Robert Shama, Freyssinet Co., Inc., New York, as he told of the unusual design and construction methods for "The Largest Concrete Spans in the Americas: Three Prestressed Concrete Bridges on the New Caracas-La Guaria Highway." An unusual application of prestressing and prepacked concrete was explained in the "Design and Construction of a Fully Vibration-Controlled Forging Hammer Foundation," by A. M. Klein, Robert W. Hunt Co., New York, and J. H. A. Crockett, Chartered Civil and Structural Engineer, London, England. W. E. Dean, Engineer of Bridges, Florida State Highway Dept., Tallahassee, told of the extensive use of "Prestressed Concrete in Tampa Bay Bridge." The relatively new application, in this country, of prestressed concrete to building construction was described by Curzon Dobell, Preload Enterprises, Inc., New York, in "Prestressed Concrete Girders —Manhattanville College—Purchase, N. Y."

N. M. Newmark, Research Professor of Structural Engineering, University of Illinois, emphasized the value of continued research on prestressed concrete and in reporting on research in this field Jack R. Janney, Portland Cement Assn., Chicago, presented results of extensive bond tests, in part verifying the dependability of bond between concrete and smooth surface wires of relatively small diameter.

A number of exhibits in the registration foyer demonstrated various methods of prestressing concrete.

"We have passed beyond the small projects . . . into the field of larger and more important utilization," Rear Admiral Joseph F. Jelley, newly appointed director of ACI, told the large group in summarizing the prestressed concrete session. The Chief of the Bureau of Yards and Docks cited the Tampa Bay Bridge and New York Pier 57 as examples of such projects in this country, and said that he was impressed with the indication that prestressed concrete is becoming competitive with the older materials and methods of construction.

"Of particular interest to me," he added, "is the fact that savings in steel, particularly structural steel, can be expected from the use of prestressed concrete. The savings of structural shapes have been particularly important during the past two years when the construction industry has been operating under a system of priorities and allocations."

Admiral Jelley emphasized the need for a long-range coordinated program of research such as that advocated by Professor Newmark but made it clear that past and current research indicates that designers have been too conservative up to now.

"I have noticed," he said, "that most designers are conservative. They prefer to learn to walk before they begin to run. I'm sure our designers are now learning to walk firmly as far as prestressing is concerned."

Engineers attending the joint session on precast concrete on September 12, at which Stewart Mitchell presided, saw spectacular illustrations of past, current, and proposed thin-shell concrete roof construction here and abroad.

Highly unusual projects were described and illustrated by Louis Corbetta of Corbetta Construction Co., who presented the paper of Pier Luigi Nervi, Nervi and Bartoli, Rome, Italy. Of particular interest were the 320-ft span Torino Exposition Hall; Dr. Nervi's "birdlike cage" hangar built in the early '40's on the shores of the Mediterranean; and the salon of the Bathing House of Chianciano, built in 1951. In this latter building precast, curved, undulated slabs had a span length of about 41 ft.

Corbetta stated that Dr. Nervi, after studying the procedure of architects Loretio and Marchi in designing a large hangar for the Buenos Aires Airport with a span of about 590 ft, felt the possibilities were almost limitless. Dr. Nervi concluded that it is possible without great cost to build an arch with a span of 300 m. (about 984 ft) long enough to cover St. Peter's Square in Rome, including the Porticato of Benini.

Charles Whitney, Ammann and Whitney, New York and Milwaukee, and Anton Tedesko, Roberts and Schaefer, Chicago, presented papers on thin-shell design and construction and included in their slides several outstanding American structures.

Some of these, such as the terminal building proposed by Hellmuth, Yamasaki and Leinweber, architects, for the St. Louis Municipal Airport, and the auditorium being designed by Eero Saarinen and Associates for Massachusetts Institute of Technology, employ designs uncommon in America, and indicate that thin-shell development in the United States is becoming more imaginative.

A report on analysis and tests of a cylindrical shell roof model by Bruno Thurlimann of Lehigh University and Bruce C. Johnston, Professor of Structural Engineering at the University of Michigan, rounded out the thin-shell discussion.

A paper on the precast concrete foundations in New York Harbor Pier 57, by E. H. Praeger; a report on precast concrete in highway bridge construction by E. L. Erickson, Chief of the Bridge Branch of the Bureau of Public Roads; and an illustrated summary of tests of fire resistance of reinforced concrete floors by J. P. Thompson of the Portland Cement Association, concluded the session.

The outstanding program was arranged by a Technical Program Committee composed of C. E. Wuerpel, Chairman, L. H. Corning, A. E. Cummings, and M. J. Holley, Jr. General arrangements were under the efficient direction of Harry C. Delzell.

## Rhoades becomes consulting geologist

Roger Rhoades has joined the staff of R. J. Tipton and Associates, Inc., Denver, Colo., as consulting geologist. Formerly he was chief geologist with the U. S. Bureau of Reclamation, a position he had held since 1941.

During his association with the Bureau of Reclamation, he organized the Bureau's Petrographic Laboratory, and for several years supervised the Earth Materials Laboratory. As chief geologist he was responsible for supervision of geological work in the western states and Alaska.

In addition to these domestic activities, Mr. Rhoades has engaged in geologic studies of many foreign and international engineering projects, including the Snowy Mountains developments in Australia, and the Rio Grande developments of the International Boundary and Water Commission.

Mr. Rhoades has been an ACI member since 1942.

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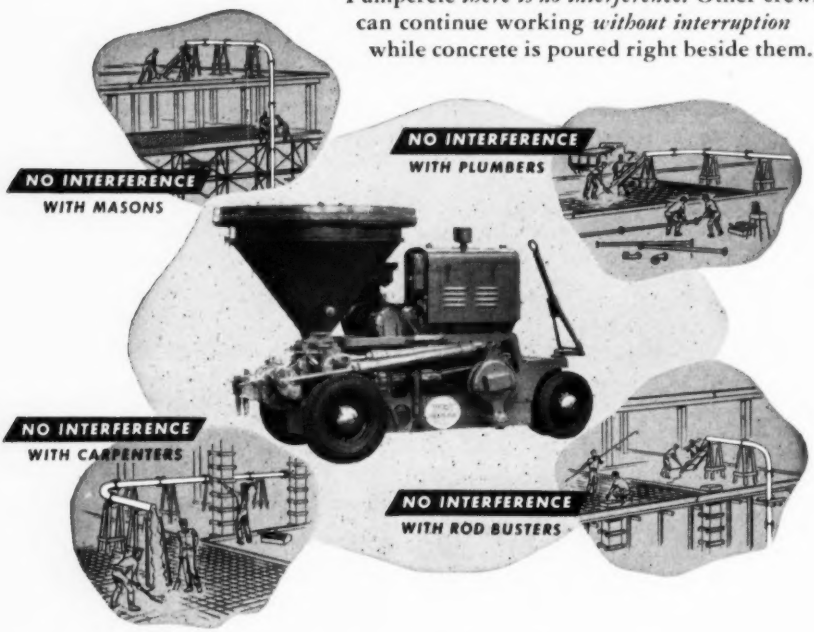


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# Kennedy nominated for president

## Whitney receives nomination for vice-president

The 1952 ACI Nominating Committee, consisting of Harmer E. Davis, chairman, H. J. Gilkey, Frank H. Jackson, Carl A. Menzel, Douglas E. Parsons, Myron A. Swayze, H. F. Thomson and Kenneth B. Woods, reports the following nominations for election at the 49th annual convention in Boston.

**For President**

Henry L. Kennedy to succeed A. T. Goldbeck for a one-year term beginning at the February 1953 convention.

Mr. Kennedy, Manager of the Cement Division, Dewey and Almy Chemical Co., Cambridge, Mass., is the author of several papers in the ACI JOURNAL, and has been associated with the Institute since 1934. He is a member of ACI Committee 115, Research, and Committee 613, Recommended Practice for the Design of Concrete Mixes. He has also been active in administrative work, being a member of the Board of Direction since 1944.

Mr. Kennedy, as a consulting engineer, has specialized in reinforced concrete design and construction in the United States, Canada, Germany and England. For ten years he was head of the construction course at Wentworth Institute, specializing in concrete instruction, and helped organize and direct the course in concrete technology at the Harvard Graduate School of Engineering.

**For Vice-President**

Charles S. Whitney for 2-year term, beginning at the February 1953 convention.

Mr. Whitney, Consulting Engineer, Ammann and Whitney, New York, N. Y., and Milwaukee, Wis., has been an ACI member since 1920 and is chairman of ACI Committee 312, Plain and Reinforced Concrete Arches; ACI-ASCE Joint Committee 327, Shear and Diagonal Tension, as well as being a member of Committee 214, Evaluation of Results of Compression Tests of Field Concrete; and ACI-ASCE Joint Committee 327, Ultimate Load Design.

Mr. Whitney is well known for his contributions to reinforced concrete design, particularly in thin-shell construction, and other arched structures. Honors to Mr. Whitney are many, including the ACI Wason Medal for the most meritorious paper in 1932, "Plain and Reinforced Concrete Arches;" the Alfred E. Lindau Award in 1951 "in recognition of his many contributions to reinforced concrete design practice;" the Fuertes Graduate Medal of Cornell University twice; and the ASCE J. James R. Croes Medal.

C. H. Scholer, Head, Dept. of Applied Mechanics, Kansas State College, Manhattan, Kan., elected for a 2-year term as vice-president at the 1952 convention in Cincinnati, continues in that office.

*Continued on p. 8*

*Continued from p. 7*

### Directors

For Directors, 3-year terms, four nominations for as many places on the Board: Federico Barona de la O, Arthur P. Clark, Jay E. Jellick and Vernon P. Jensen.

Mr. Barona, Head, Technical Department of Materials, Hydraulic Resources Ministry, Mexico City, Mexico, has been an ACI member since 1947 and is an active member of ACI Committee 207, Properties of Mass Concrete.

In 1928 he was appointed concrete technologist at Rodriguez Dam and in 1933, head of the materials laboratories for Mexico's large reclamation program under the Comision Nacional de Irrigacion. In 1947 when the commission was raised to the rank of a federal ministry, he was appointed to his present position.

A graduate of the University of Mexico, he taught materials of construction at the Instituto Politecnico Nacional for 16 years and is the author of various papers on cement and concrete in technical journals of Mexico.

Mr. Clark, Research Associate, American Iron and Steel Institute, at the National Bureau of Standards, Washington, D.C., has been affiliated with ACI since 1924 and is a member of ACI Committee 208, Bond Stress, and ACI-ASCE Joint Committee 326, Shear and Diagonal Tension.

After graduating from the University of Michigan in 1903 with a BS in CE, he spent 3½ years in the bridge department of the Pere Marquette Railroad. He has been associated with reinforced concrete engineering and reinforcing distribution studies since 1906, first with the Corrugated Bar Co. of St. Louis and then continued with the company when it consolidated with Kalman Steel Co. and was later purchased by Bethlehem Steel Co. He has been at the Bureau of Standards since 1944.

Mr. Jellick, Manager, Portland Cement Information Bureau, San Francisco, Calif., has been an ACI member since 1924.

His work at the Portland Cement Information Bureau is largely with army engineers and navy public works officers, advising them on the many uses of concrete. Also, he has introduced the use of soil-cement stabilization, and lean-mix concrete for parking areas, aprons and runways. He suggests designs and cross sections and inspects the concrete work when under construction, and makes recommendations for improvement when necessary.

Mr. Jellick studied civil engineering at the University of Idaho and is a registered civil engineer in California.

Dr. Jensen is Staff Consultant, C. F. Braun and Co., Alhambra, Calif. An ACI member since 1931, he is a member of ACI Committee 318, Standard Building Code; Committee 321, Design of Reinforced Concrete Slabs; and ACI-ASCE Joint Committee 327, Ultimate Load Design.

Dr. Jensen received a BS in CE and an MS in Theoretical and Applied Mechanics from the University of Illinois. In 1936 he obtained his PhD in Applied Mathematics and Theoretical and Applied Mechanics from Iowa State College. He worked in research on Haydite concrete from 1929 to 1931 as special research assistant under the late Frank E. Richart at the University of Illinois. He was an instructor in mechanics at Iowa State College in 1931 and became assistant professor in 1932. In 1936 he left Iowa State College to return to research on a cooperative investigation on the effect of concentrated loads on highway bridge slabs at the University of Illinois. In 1943 he joined the staff of C. F. Braun and Co., as consulting engineer.

### Nominating Committee

The 20 candidates for membership on the 1953 Nominating Committee—five to be elected—are:

| | |
|---|---|
| Delmar L. Bloem | R. E. Copeland |
| Bengt F. Friberg | Leo H. Corning |
| W. C. Hansen | H. F. Gonnerman |
| Homer M. Hadley | L. E. Grinter |
| Herbert Insley | Edward C. Harding |
| W. J. McCoy | James A. McCarthy |
| Warren Raeder | Stanton Walker |
| C. A. Willson | George W. Washa |
| P. M. Woodworth | Roderick B. Young |
| Herbert Cook | William Lerch |

**Harvey Whipple**

Harvey Whipple, who for 32 years was the pillar of the American Concrete Institute as Secretary and later as Secretary-Treasurer, died September 6, 1952.

Harvey Whipple began a journalistic career as a reporter on the *Port Huron* (Mich.) *Times* in 1903. In 1904 he came to Detroit and worked as a reporter on the *Detroit Free Press* and then on the *Detroit News*.

In 1910 he became associate editor of *Concrete-Cement Age*. Successively he became managing editor and then editor. As editor he attended the conventions of the National Association of Cement Users, saw that organization grow to a membership of 1400, saw its successor, the American Concrete Institute, falter and shrink to a mere 350, and totter on the brink of oblivion.

Faced by these disquieting realities, responsible ACI leaders sought a wise head and capable hands to do the actual work of rebuilding, to round out and execute the plans, and to turn every emergency effectively to progress. They selected the friendly, understanding, energetic, young editor of *Concrete-Cement Age* and it was then that Harvey Whipple became part-time Secretary of ACI. His intense interest in Institute affairs soon induced him to devote full time to them and through his continued efforts, membership was more than 5800 at the time of his death. In 1921 he assumed the responsibilities of Institute treasurer and filled the dual role until this year when he was named editorial consultant upon his retirement July 1.

Harvey Whipple inaugurated the ACI *News Letter* in 1920 which became part of the JOURNAL of the American Concrete Institute when that technical periodical was begun under his guidance in 1929. For 23 years the JOURNAL has published the results of research, design and construction activities of many of the experts in these phases of concrete work and has become a recognized authority in this field.

His memory will remain with us in his work and deeds in ACI. These are the silent witnesses which time cannot eradicate.

## Germundsson appointed manager

Thor Germundsson has been appointed Manager of the Structural and Railways Bureau of PCA, Chicago, Ill. Mr. Germundsson joined PCA in 1930 after serving several engineering organizations for eight years as a designer of steel and concrete structures for buildings and subways.

A nationally-known authority on prestressed concrete, Mr. Germundsson also has a broad background of experience in the entire structural field.

## McHenry and Catton advanced

Miles D. Catton, Director of Development of PCA since 1949, has been appointed Assistant to the Vice-President for Research and Development, PCA.

Mr. Catton is best known as the author of numerous scientific papers and technical brochures on soil-cement construction and for his pioneering work in this field. Between 1935 and 1940, laboratory and field studies directed by him on the feasibility of scientific control of mixtures of native soil and portland cement were in large measure responsible for the development of this low-cost paving material.

Succeeding Mr. Catton as Director of Development is Douglas McHenry, previously Administrative Assistant to A. Allan Bates.

Mr. McHenry joined the Association staff in April 1952 after 11 years of service with the U. S. Bureau of Reclamation, Denver, Colo., where he was head of the Structural Development Section and later chief of its Concrete Laboratory Section.

Mr. McHenry has long been active in ACI affairs and currently is Chairman of the Technical Activities Committee.

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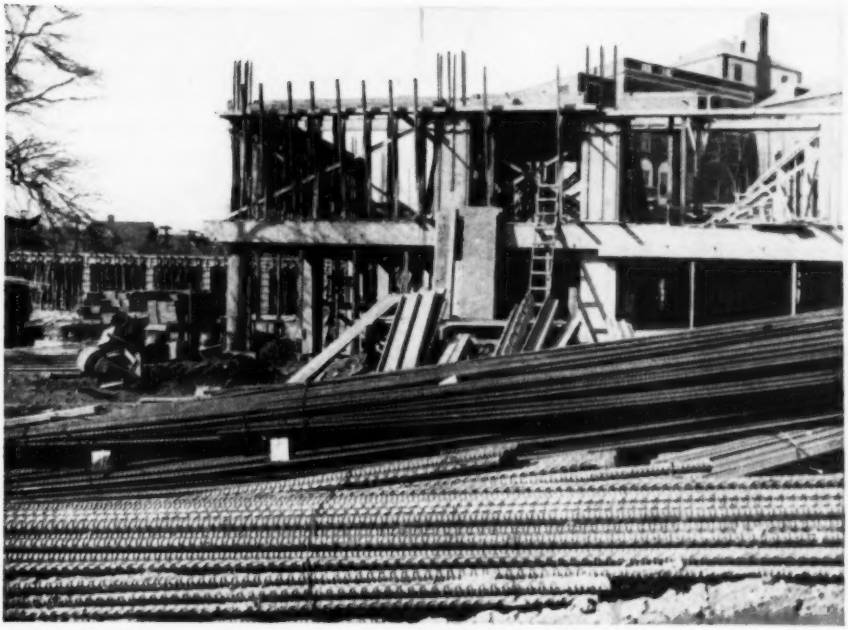

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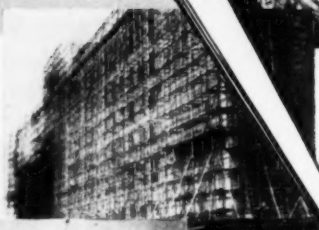

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# Who's Who This Month

## Phil M. Ferguson

An "Analysis of Beam-and-Girder Framing with Known Column Settlements," p. 77, is presented by Phil M. Ferguson, Chairman, Dept. of Civil Engineering, University of Texas, Austin.

An ACI member since 1930, he is a member of ACI Committees 115, Research; 318, Standard Building Code; and 321, Design of Reinforced Concrete Slabs. Over the past twelve years research on stress distribution in reinforcing steel, especially as modified by cracks, and questions of bond strength and bond stress distribution have occupied more and more of his time.

After graduation from the University of Texas in 1922 and master's degrees from the University of Texas in 1923 and the University of Wisconsin in 1924, he spent several years with Dwight P. Robinson and Co. of New York City in structural design of power plants and industrial buildings and construction of hotels and apartment buildings.

Professor Ferguson returned to the University of Texas as associate professor in the field of structures and materials in 1928. He was raised to the rank of professor in 1939 and was made chairman of the civil engineering department in 1943. He has also been consultant on a number of projects.

## Committee 323

Committee 323, Prestressed Reinforced Concrete, a joint ACI-ASCE committee, submits "Proposed Definitions and Notations for Prestressed Concrete" on p. 85.

Under the chairmanship of A. E. Cummings, director of research, Raymond Concrete Pile Co., New York, N. Y., the committee proposes this set of notations and list of definitions.

## G. W. Washa and P. G. Fluck

G. W. Washa and P. G. Fluck describe the "Effect of Compressive Reinforcement on the Plastic Flow of Reinforced Concrete Beams," p. 89.

Professor Washa, Associate Professor of Mechanics, University of Wisconsin, Madison, is the author of numerous ACI papers. He received the Wason Medal for noteworthy research for the work reported in his 1940 paper, "Comparison of the Physical and Mechanical Properties of Hand-Rodded and Vibrated Concrete Made with Different Cements."

He was a member of the Board of Direction, 1948-50; and is now chairman of Committee 213, Properties of Lightweight Aggregate Concrete; secretary of Committee 115, Research; and a member of Committee 609, Vibration of Concrete.

Professor Washa graduated from the University of Wisconsin in 1930 with a BS in civil engineering; received his PhD from the same university in 1938. He has been actively engaged in research work for a number of years at the university.

Also at the University of Wisconsin, P. G. Fluck is assistant professor of mechanics. He received his BS in civil engineering from the university in 1941, his MS in 1947, and PhD in 1949. He has been on the staff of the Mechanics Department since 1941 except for service in the U. S. Navy and short periods with the Wisconsin Highway Commission Materials Testing Laboratory and the Timber Mechanics Division, U. S. Forest Products Laboratory.

Besides being a member of ACI, Professor Fluck is a registered professional engineer in Wisconsin and a member of Tau Beta Pi, Chi Epsilon and Sigma Xi.

## E. E. Eckert

"Heavy Duty Concrete Floors," p. 109, introduces E. E. Eckert, Superintendent of Construction and Engineering, George A. Hormel and Co., Austin, Minn.

Mr. Eckert received a BS in civil engineering from Harvard University in 1928. His early engineering experience was obtained in the employ of Parsons, Klapp, Brinkerhoff and Douglas, consulting engineers, New York, N. Y.; and Spencer, White and Prentis, New York, N. Y.; and Detroit, Mich. He is a member of Tau Beta Pi and the National Society of Professional Engineers.

*Continued on p. 14*

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## Who's Who

*Continued from p. 13*

### Eivind Hognestad

Eivind Hognestad, Research Associate Professor of Theoretical and Applied Mechanics, University of Illinois, Urbana, reports on "Inelastic Behavior in Tests of Eccentrically Loaded Short Reinforced Concrete Columns," p. 117.

Dr. Hognestad graduated from Norway's Institute of Technology in 1947 as a civil engineer. As a student he also worked as a research assistant under Prof. Inge Lyse. In 1947, he received a research appointment at the University of Illinois where he worked on various projects pertaining to concrete as an assistant to the late Prof. Frank E. Richart.

Dr. Hognestad received his MS degree at the University of Illinois in 1949 and the Degree of Doctor of the Technical Sciences at Norway's Institute of Technology in 1952.

He has been an ACI member since 1947 and is a member of ACI-ASCE Joint Committees 326, Shear and Diagonal Tension, and 327, Ultimate Load Design.

### E. W. Carlton and J. H. Senne

"Instrumentation and Strain Measurement in Welded Wire Fabric Reinforced Concrete Slabs," p. 141, is by E. W. Carlton and J. H. Senne.

E. W. Carlton is Professor of Structural Engineering in the Department of Civil Engineering, University of Missouri School of Mines and Metallurgy, Rolla.

Professor Carlton was graduated from the Missouri School of Mines in 1926 with a BS in CE. He also has a BS in ME, an MS in industrial engineering and the Degree of Civil Engineer.

His memberships in technical organizations include ASCE, MSPE, NSPE, ASEE, Missouri Academy of Science, International Association for Bridge and Structural Engineers, and Missouri Highway Engineers Association. He is also a member of Triangle, Chi Epsilon, Phi Kappa Phi and Sigma Xi.

J. H. Senne is Assistant Professor of Civil Engineering, University of Missouri School of Mines and Metallurgy, Rolla.

Professor Senne's construction experience with Laclede-Christy Clay Products Co. of St. Louis and later with the U. S. Navy

*Continued on p. 20*

## Adolf Buhler

Only recently did ACI receive word of the death of Adolf Buhler—an Honorary Member of ACI. Dr. Buhler of Bern, Switzerland, died September 7, 1951, after a long illness.

An outstanding engineer and bridge builder, he studied at the Confederate Polytechnical University, Zurich, Switzerland, and received his diploma in engineering in 1904. In 1912 he was employed by the General Administration Bureau of the Swiss Bridge Construction Bureau and from 1918-1944 acted as Section Chief for Bridge Building and Construction. From 1944 to his retirement in 1947, he was Superintendent Engineer in the Construction Dept. of the Confederation Bureau.

His last great construction work, completed under his personal supervision, was the four-track viaduct over the Aare River in Bern.

In overcoming many unsurmountable difficulties, he aided in the improvement of welding technique during the early 1920's to bring about conclusive success in the bridge construction industry. Being accustomed to devise exact solutions for bridge steel construction, he was persistent in using the most highly selective concrete materials for massive construction work.

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## Charles C. Sunderland

Charles C. Sunderland, who retired as chief bridge engineer for the John A. Roebling's Sons Co., Trenton, N. J., last June, died July 31. Mr. Sunderland succeeded Washington Roebling as chief bridge engineer. He had an active career of more than 50 years from 1901 when he began as a draftsman in the Roebling Bridge and Tramway Dept., then located in New York,

*Continued on p. 20*

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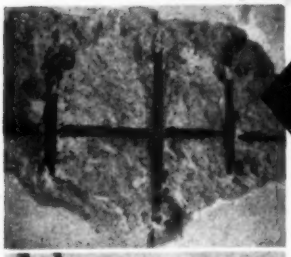

Typical example of spalling. Note corrosion of reinforcing rods exposed by disintegrating concrete.

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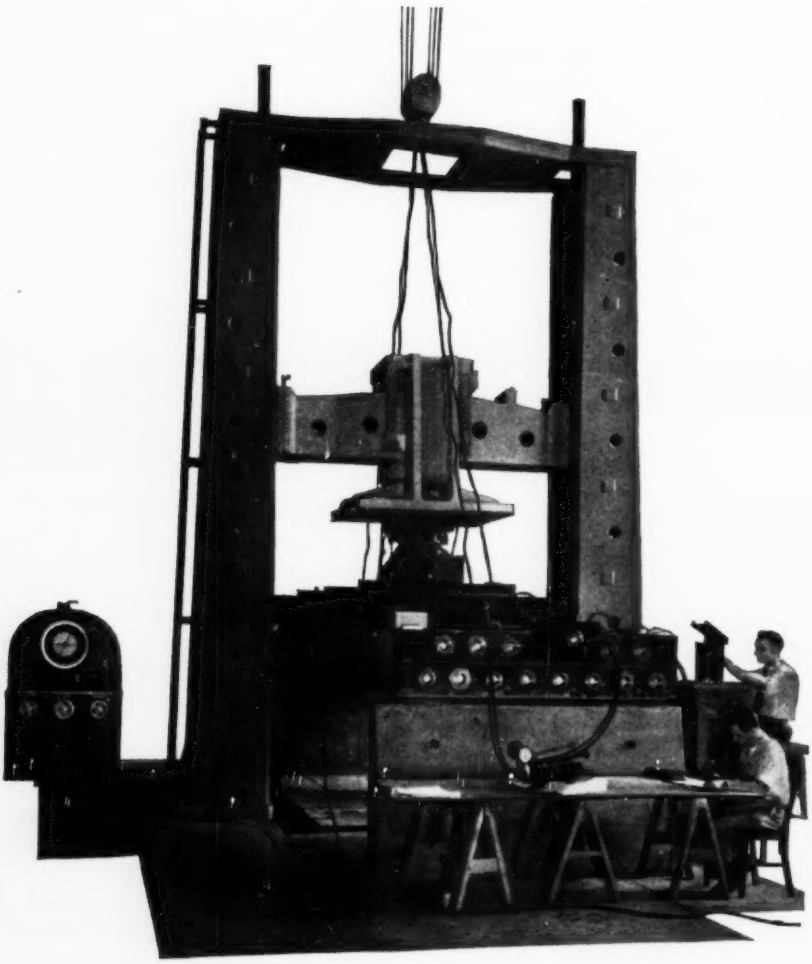

# pieces of equipment— 1,000,000# machine"

. . . that's what an official of the Portland Cement Association's Research and Development Laboratories says about this new Baldwin which permits actual service loads in flexure and compression to be applied to *full-scale* concrete structural members and assemblies.

Useful is right! With a capacity of 1,000,000 lbs. . . . a maximum clear space between columns of 10 feet and between bedplate and cross-head platen of 16 feet . . . a foundation design to accommodate structures or beams up to 30 feet between supports . . . this new Baldwin testing machine opens a complete new field of opportunity in improving the design of concrete members and structures.

Tests like this one illustrated have already demonstrated the benefits of the new machine. Here a 20-ton prestressed railroad trestle slab, 25 feet long, 7 feet wide and 1 foot 6 inches deep, is being loaded to failure, which occurred at 2.8 times design load.

The new possibilities are further extended by another Baldwin testing device . . . the SR-4® strain gage. Over 100 of these gages were distributed at selected points throughout the slab. They were connected to a central "switchboard" so that readings from each station could be taken at each increment of loading. By providing a complete picture of stress distribution in the slab, the gages furnish invaluable data to the designer.

You will find Baldwin Concrete Testing Machines helpful aids in plant,

highway and construction laboratories for routine and specification testing. For further information on the advantages of these Concrete Testing Machines you are invited to write for the following bulletins:

*Bulletin 327—on the Baldwin 100,000 lb. Concrete Testing Machine.*

*Bulletin 318—on the Baldwin 300,000 lb. Concrete Testing Machine.*

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**TESTING HEADQUARTERS**

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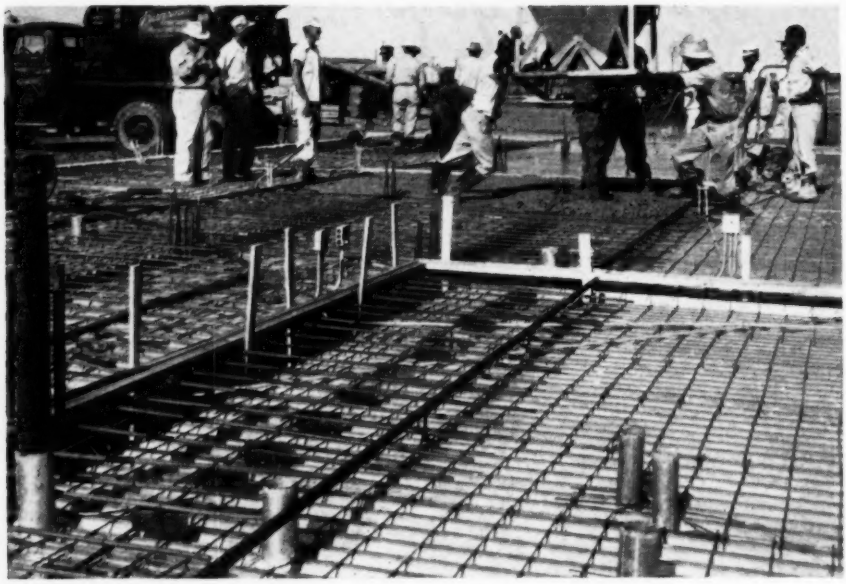

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**Cofar Saves Steel**

Permits monolithic continuous slab design; reduces framing by reducing slab deadweight.

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Eliminates ineffective concrete below reinforcement, yet allows for full effective design depth.

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# Honor Roll

**February 1—August 31, 1952**

Newlin D. Morgan, Sr. leads the Honor Roll with 27 credits, Howard Simpson and W. B. Summer are tied for second place with 10 credits each and F. Thomas Collins is in fourth place with 9 credits.

| | |
|---|---|
| Newlin D. Morgan, Sr. (Ill.) | 27 |
| Howard Simpson (Mass.) | 10 |
| W. B. Summer (Pa.) | 10 |
| F. Thomas Collins (Calif.) | 9 |
| R. A. Iliya (Lebanon) | 7 |
| Theodore O. Reyhner (Colo.) | 7 |
| C. H. Scholer (Kans.) | 7 |
| Walter H. Price (Colo.) | 6 |
| Henry L. Kennedy (Mass.) | 4½ |
| Joseph A. Brunner (N. Y.) | 4 |
| George C. Ernst (Nebr.) | 4 |
| Eddy N. Hernandez (Costa Rica) | 4 |
| Arturo Obadia B. (Venezuela) | 4 |
| J. L. Savage (Colo.) | 4 |
| Lawrence L. Schwinn (Wis.) | 4 |
| Albert Goldberg (Mass.) | 3 |
| Hunter W. Hanly (Ohio) | 3 |
| Samuel Hobbs (Calif.) | 3 |
| Myle J. Holley (Mass.) | 3 |
| M. L. Hurst (Ia.) | 3 |
| Alvin C. Loewer, Jr. (Pa.) | 3 |
| I. E. Morris (Ga.) | 3 |
| Chester P. Siess (Ill.) | 3 |
| G. B. Southworth (Ohio) | 3 |
| C. E. Wuerpel (Ill.) | 3 |
| Sterling L. Bugg (Fla.) | 2½ |
| Miguel Angel Abalo (Cuba) | 2 |
| Ricardo Acosta (Costa Rica) | 2 |
| MacGregor S. Anderson (Texas) | 2 |
| Pedro Arismendi A. (Venezuela) | 2 |
| M. A. Arnold (N. C.) | 2 |
| T. Asano (Japan) | 2 |
| Fred C. Bamman (Fla.) | 2 |
| Frederick L. Browne (Ore.) | 2 |
| J. R. Cassell (Md.) | 2 |
| Francisco J. Cordova (Ohio) | 2 |
| Leo H. Corning (Texas) | 2 |
| Raymond E. Davis (Calif.) | 2 |
| M. F. duPont (Ill.) | 2 |
| John R. Dwyer (D. C.) | 2 |
| Harlan H. Edwards (Wash.) | 2 |
| G. E. Elsenhans (N. Y.) | 2 |
| H. B. Emerson (Ill.) | 2 |
| L. G. Farrant (Fla.) | 2 |
| John Jay Fina (Ill.) | 2 |
| Russell S. Fling (Ohio) | 2 |
| J. R. G. Hanlon (N. Z.) | 2 |
| E. L. Howard (Calif.) | 2 |
| Chuzo Itakura (Japan) | 2 |
| Lane Knight (Canada) | 2 |
| James A. McCarthy (Ind.) | 2 |
| Nathan Newmark (Ohio) | 2 |
| F. J. Ochoa U. (Guatemala) | 2 |
| Dan H. Pletta (Va.) | 2 |

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*Continued from p. 15*

N. Y. He became an assistant engineer in 1905 and in 1929, when a separate bridge division was established, he was named chief bridge engineer. During his service with the company it completed such major contracts as the main cables for the George Washington Bridge, New York-New Jersey, the Golden Gate Bridge, San Francisco, and the Tacoma Narrows Bridge, Wash.

Mr. Sunderland had been an ACI member since 1949 and was a member of ACI-ASCE Joint Committee, 323 Prestressed Reinforced Concrete.

## Roger W. Armstrong

Roger W. Armstrong, consulting engineer to the Board of Water Supply, New York, N. Y., died August 24. Most of his active career was in water supply work for New York City, first on the Catskill system and later on the Delaware system. He joined the staff of the Board of Water Supply in 1906 after four years with John R. Freeman, one of the three engineers who had recommended the Catskill project. He was serving as a section engineer on that project in 1917 when he was called to service as a captain and put in charge of utilities at Camp Upton, N. Y. He returned to work with the Board of Water Supply in 1921 following several months in private practice and spent about two years on studies for new sources of supply before resuming work on the Catskill system. Mr. Armstrong had been a member of ACI since 1941.

## Who's Who

*Continued from p. 14*

Seabees during World War II whetted his interest in structural design work, with consequent study in that field. He was an instructor in the Civil Engineering Department of the University of Missouri School of Mines and Metallurgy from 1948 until recently when he was named assistant professor.

Professor Senne received his BS in CE from Washington University, St. Louis, Mo., in 1948; and his MS in CE in the structural design field from the University of Missouri School of Mines and Metallurgy in 1951. He is a member of Tau Beta Pi, Chi Epsilon, Phi Kappa Phi and an associate member of Sigma Xi.

# New Members

The Board of Direction approved 41 Individual, 2 Corporation, 14 Junior and 4 Student Members for August. With adjustments for losses—resignations, deaths, nonpayment—the total membership September 1 was 5825.

## Individual

ANDREWS, MICHAEL J., c/o Arnold Stone Co., Greensboro, N. C. (Struct. Engr.)

ARTLEY, WILLIAM H., JR., 504 E. Bay St., Savannah, Ga. (Design, Estimating, Office Supervision of field work, Artley Co.)

ATKINS, WILLIAM F., Lehigh Materials Co., Lansford, Pa. (Salesman)

BACKUS, EUGENE S., c/o The Dorr Co., 225 Greenwich Ave., Stamford, Conn. (Struct. Engr.)

BOYD, WILLIAM B., c/o Resident Engrs., APO 937, c/o PM, Seattle, Wash. (Constr. Inspector, Corps of Engrs.)

BOYLE, J. R. LESTER, 327 Spurgeon Bldg., Santa Ana, Calif. (Engr.)

CHITTY, FLOYD C., JR., P. O. Box 578, Hartsville, S. C. (Design, Super., Sonoco Products Co.)

CLARK, R. E., The Rise, Rural Delivery No. 3, Napier, N. Z.

DEGANI, ZEV, 47 Frishmann St., Tel-Aviv, Israel (Head, Planning Div., Malben, American Joint Distribution Comm.)

DIENER, F. P., Universal Atlas Cement Co., 100 Park Ave., New York 17, N. Y. (Dir. Tests & Research)

FICARRATTO, SADO C., 282 Oneida Ave., Elmhurst, Ill. (Design, Corps of Engrs.)

FOSTER, R. W., c/o Gannett, Fleming, Corddry & Carpenter, Inc., 600 N. Second St., Harrisburg, Pa. (Asst. Chf. Engr.)

GEDNEY, K. H., 414 Vance Bldg., Seattle 1, Wash. (Engr.)

GRAHAM, S. L., c/o The Armoured Floor Co., Ltd., 5710 Western Ave., Montreal, Que., Canada (Field Super.)

GUMPERTZ, WERNER H., 47 Orchard Ave., West Newton 65, Mass. (Asst. Prof., Cons. Engr., MIT)

HENDRIX, IDUS E., Bureau of Reclamation, Columbia Falls, Mont. (Constr. Engr.)

HOWARD, HENRY G., 611 Hyman Dr., New Orleans 21, La. (Civil & Struct. Engr., Bedell & Nelson, Engrs.)

HUFSCHMIDT, W. JOHN, Route 8, Box 380, Milwaukee 13, Wis. (Pres., Treas., Steel-Crete Constr. Co.)

JOHNS, EDWARD A., 7016 N. 31 Ave., Omaha 11, Nebr. (Super. Struct. Engr., Corps of Engrs.)

JONES, G. M., c/o Preload S. A. Pty., Box 5927, Johannesburg, S. Africa (Engr.)

LAMBERTON, BRUCE A., The Prepakt Concrete Co., 308 Johnson Bldg., Denver, Colo. (Regional Representative)

LUQUE L., JORGE, Reynosa No. 14, Mexico, D. F., Mexico (Constr. Supt., Mexican Light & Power Co., Ltd.)

MARTIN FRANCHI, ENRIQUE, Urbanizacion Altamira, 4a Avenida No. 82, Caracas, Venezuela (Engr., Constr.)

MATUTE GUILLEN, FRANCISCO, Cruce sita a S. Miguel No. 71-3, Notre 7, Caracas, Venezuela (Struct. Engr.)

MCCLURE, VERNE O., 39 S. LaSalle St., Chicago 3, Ill. (Partner, Jensen, McClure & Halstead, Arch., Engrs.)

MCFALLS, H. L., Haslett Warehouse Co., 51 Webster St., Oakland, Calif. (Salesman)

MENARD, WILLIAM, Economy Block Co., 6332 W. State St., Wauwatosa 13, Wis. (Pres.)

PEYTON, R. L., Kans, Highway Comm., Engr. of Research, Masonic Temple, Topeka, Kans.

PORRATA-DORIA, FCO L., Maribel 1500, Apt. 1, Santurce, P. R. (Arch. Engr., P. R. Water Resources Authority)

POWELL, W. L., 501 Thomas Bldg., Dallas, Texas (Cons. Engr.)

RAYNER, ALFRED G., 1175 Nicholson Dr., Baton Rouge, La. (Designing Struct. Engr., Bodman & Murrell, Archs.)

SPANGLER, FRANK, 7101 SE 36th Ave., Portland, Ore. (Pres., Empire Bldg. Material Co.)

STEKETEE, JACK N., Samborn, Steketee & Assocs., 1214 Cherry St., Toledo 4, Ohio (Struct. & Indust. Engrg.)

TAKANO, S., Onoda Cement Co., Ltd., Onoda, Yamaguchi-ken, Japan (Vice-chief of central research lab.)

TANNER, ROBERT, 875 West End Ave., Apt. 4D, New York 25, N. Y. (Constr. Supt., Engr., Barnaby Concrete Corp.)

WAKEMAN, CARROL M., Testing Engr., Los Angeles Harbor Dept., P. O. Box 785, Berth 161, Wilmington, Calif.

WALBERT, LEO B., 10600 Parkhurst Dr., Cleveland 11, Ohio (Asst. Mgr., Field Engrg. Dept., Master Builders Co.)

WILHOIT, VIRGIL W., USBR, Columbia Falls, Mont. (Super. Inspector)

WHITTLE, RALPH D., P. O. Box 5602, Dallas, Texas (Contr.)

WIN, KYAW, c/o Knappen, Tippetts, Abbett, McCarthy, Engrs., 62 W. 47th St., New York 36, N. Y. (Chf. Engr., Commissioners for the Port of Rangoon)

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## Corporation

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SUMNER S. SOLLITT CONSTR. CO., 307 N. Michigan Ave., Chicago 1, Ill. (John G. Dempsey, Concrete Div. Lab.)

## Junior

BALL, WALTER T., c/o Joseph Sparrow & Sons Ltd., P. O. Box 36, Dunedin, N. Z. (Engrg. Cadet)

CULBERTSON, LOWELL E., JR., 203 Commonwealth Ave., Port Wentworth, Ga. (Struct. Engr., Union Bag & Paper Corp.)

DOBYNS, JAMES R., Box 507, Dublin, Va. (C. E., Trinkle & Dobyns)

FLORES, LUIS M., 3140 S. Michigan Ave., Chicago 16, Ill. (Drafting, Pace Assocs., Arch., Engrs.)

GREGORY, ROY W., CBD 1516 Box 21, Navy 1506, c/o FPO, New York, N. Y. (Design, Field Super., Constr. Bn. Detachment)

KEYES, ROBERT R., 2170 E. Lincoln, Decatur, Ill. (Struct. field Representative, PCA)

KOWEN, JULIUS, P. O. Box 290, Upington, C. P., South Africa (Cons. C. E.)

MCILROY, WILLIAM R., c/o Joseph Sparrow & Sons Ltd., P. O. Box 36, Dunedin, N. Z. (Engrg. Cadet)

PALOFF, HERBERT, 4642 N. Hermitage Ave., Chicago 40, Ill. (Struct. design, Corps of Engrs.)

PENA Y LILLO, RENE H., Calle Cuba No. 14, La Paz, Bolivia (Asst. Engr., "Construcciones Leon")

SCHEPPELE, KENNETH L., 32 B. Briarwood Gardens, Yale St., Nutley, N. J. (Struct. Steel & R. C. Designer, Gibbs & Hill, Inc.)

SHORT, KENNETH W., Apt. 7, 2402 Queen St., E., Toronto, Ont., Canada (Struct. Designer, Hooper & Yolles, Engrs.)

## Student

DEJONG, AART PIETER, 2610 Pearkes Rd. (UBC), Vancouver, B. C., Canada

KUWATLY, SADEK K., c/o American Univ. of Beirut, Beirut, Lebanon

MCCORMACK, WILLIAM, 617 W. Hill St., Champaign, Ill.

SANABRIA, EDWIN G., Avenida la Barranquilla No. 35, Guatemala, Guatemala

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Mills Sampey (Ohio) ..... 2
Saul Shaw (N. J.) ..... 2
Willard H. Stevenson (Ind.) ..... 2
J. Sumner (Canada) ..... 2
John P. Vertrees (Mont.) ..... 2
Ivan M. Viest (Ill.) ..... 2
George E. Weingerter (Fla.) ..... 2
Henry Wilckens (Australia) ..... 2
Anis Yarid (French Morocco) ..... 2
Robert Zaborowski (N. Y.) ..... 2

## Menzel appointed consultant

Carl A. Menzel, former Manager of the Housing and Cement Products Bureau, PCA, Chicago, Ill., has been appointed Consultant on Concrete Technical Problems. Mr. Menzel is well known to the engineering profession for his extensive research and development work on building materials and construction techniques. He is also a nationally recognized authority on fire resistance.

In 1951 Mr. Menzel won the annual award of CRSI for his contribution to the development of an improved type of deformed bar for use in reinforced concrete. He has also received the Dudley Medal of ASTM and the Wason Medal of ACI for outstanding development work in the concrete field. Mr. Menzel joined the PCA staff in 1928 as an associate research engineer and had been manager of the Housing and Cement Products Bureau since 1947.

## Corning appointed PCA director of promotion

Leo H. Corning has been appointed Director of Promotion, PCA, Chicago, Ill. In his new capacity Mr. Corning will supervise the promotion work of the Association's general office staff in Chicago. Widely recognized as one of the nation's outstanding authorities on reinforced concrete construction, he has been a member of PCA's staff for 23 years.

Mr. Corning joined the staff of the PCA Structural Bureau in 1929, was appointed Assistant Manager of that Bureau in 1935 and Manager in 1949—the post he held at the time of his appointment as Director of Promotion.